

AMENDMENTS

In the Claims

Please substitute the following amended claims for the pending claims having the same number:

Sub C1
B1
Claim 1. A method for etching a semiconductor substrate using a germanium hard mask, the semiconductor substrate having a dielectric layer over a major surface thereof, the method comprising the steps of:

depositing a layer of metallic germanium over the dielectric layer;
patterning the layer of metallic germanium to form the germanium hard mask as a top most layer over the dielectric layer;
selectively etching the dielectric layer through the germanium hard mask with the germanium hard mask as a top most layer to form an opening in the dielectric layer; and
selectively etching the semiconductor substrate through the opening in the dielectric layer.

Sub C2
B2
Claim 9. A method for fabricating a semiconductor device having a dielectric stack over a major surface thereof, comprising the steps of:

depositing a metallic germanium layer over the dielectric stack;
patterning the metallic germanium layer to form a germanium hard mask as a top most layer over the dielectric stack;
etching the dielectric stack through the germanium hard mask with the germanium hard mask as a top most layer to form a dielectric hard mask over the major surface of the semiconductor substrate;
etching the semiconductor substrate through the dielectric hard mask;
forming doped regions in the semiconductor substrate; and
forming dielectric and conductive structures over the semiconductor substrate.

Sub C3
763

Claim 15. A method for etching a semiconductor wafer, the semiconductor wafer having a dielectric stack over a major surface thereof, the method comprising the steps of:

forming a germanium hard mask as a top most layer over the dielectric stack;
etching the dielectric stack through the germanium hard mask to form a dielectric hard mask over the major surface of the semiconductor wafer; and
etching the semiconductor wafer through the dielectric hard mask.

Please add the following new claim(s):

Claim 22 The method of claim 7, further comprising removing the photoresist layer prior to selectively etching the dielectric layer through the germanium hard mask.

Claim 23 The method of claim 13, further comprising removing the photoresist layer prior to selectively etching the dielectric layer through the germanium hard mask

Sub C4
64

Claim 24. A method for etching a semiconductor substrate having a dielectric layer over a major surface thereof, the method comprising the steps of:

depositing a layer of germanium over the dielectric layer;
depositing a photoresist layer over the germanium layer;
patterning the layer of metallic germanium through the photoresist layer to form a germanium hard mask over the dielectric layer;
removing the photoresist layer from over the germanium hard mask;
patterning the dielectric layer through the germanium hard a mask after removing the photoresist layer from over the germanium hard mask to form a dielectric hard mask over the semiconductor substrate; and
selectively etching the semiconductor substrate through the dielectric hard mask.

~~Claim 25. The method as claimed in claim 24, further comprising the step of stripping away the germanium hard mask after patterning the dielectric layer to form the dielectric hard mask.~~

Sub D
~~Claim 26. The method as claimed in claim 25, wherein stripping away the layer of germanium comprises:
oxidizing the layer of germanium to form a layer of germanium oxide therefrom;
and
removing the layer of germanium oxide.~~

B4
~~Claim 27. The method as claimed in claim 26, wherein removing the layer of germanium oxide comprises rinsing the semiconductor substrate in water.~~

Sub D
~~Claim 28. The method as claimed in claim 24, wherein depositing a layer of germanium comprises depositing the layer of germanium having a thickness between approximately 40 nm and approximately 500 nm.~~

~~Claim 29. The method as claimed in claim 24, wherein patterning the layer of germanium further comprises:
exposing and developing the photoresist layer to form a photolithography image;
and
etching the layer of metallic germanium through the photolithography image.~~